

UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT(S)	Carey et al.	CONFIRMATION NO.:
APPLN. NO.:	09/945,462	EXAMINER: Ming Chow
FILED:	August 30, 2001	GROUP ART UNIT: 2645
DOCKET NO.	CE08796R	
TITLE:	A METHOD FOR REDUCING FRAUDULENT SYSTEM ACCESS	

TRANSMITTAL LETTER FOR BRIEF ON APPEAL

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SIR:

Enclosed please find three copies of an Appeal Brief filed on behalf of the applicant(s) in the matter of the above entitled application. This Brief is filed pursuant to 37 CFR § 1.192 and following the Final Rejection dated June 30, 2005.

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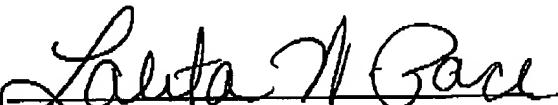
Respectfully submitted,

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IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appellants:	Carey et al.)	Examiner Ming Chow
Appl. No.	09/945,462)	Art Unit 2645
Filed:	August 30, 2001)	Atty. Docket No. CE08796R
Title:	"A Method For Reducing Fraudulent System Access"		

BRIEF ON BEHALF OF APPELLANTS UNDER 37 CFR 41.37

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Art Unit 2645**I. Real Party In Interest**

The real party in interest is Motorola Inc., by virtue of an assignment duly executed by the named inventor(s) and recorded in the Patent Office on August 30, 2001 REEL/FRAME 012165/0682.

II. Related Appeals & Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

This is an appeal from a final Office Action, dated June 30, 2005. Claims 1-3, 5 and 6 stand finally rejected. Claim 4 was cancelled in response to a first Office Action dated September 23, 2004. Claim 3 is cancelled in an amendment under 37 CFR 1.116 that has been submitted contemporaneously with this appeal. Claims 1, 2, 5 and 6 are appealed.

IV. Status of Amendments

In a first Office Action dated September 23, 2004, the Examiner rejected claims 1, 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. (U.S. patent no. 6,665,530) in view of Jung et al. (U.S. patent publication no. 2001/0025345). Claims 3 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Diep et al. (U.S. patent publication no. 2003/0048764). Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Patel (U.S. patent no. 6,591,364). In an Amendment dated February 22, 2005, the appellants amended claims 1-3 and cancelled claim 4. Claims 5 and 6 remain as originally filed.

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In a second office action dated June 30, 2005, the Examiner finally rejects claims 1-3, 5 and 6. Claims 1-3 and 5 are rejected under 35 USC §102(e) as being anticipated by Broyles et al. Claims 1, 3 and 5 are also rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. Claim 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Servi. Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Patel. An amendment under 37 CFR 1.116 has been submitted contemporaneously with this appeal. The amendment addresses an informal matter in Claim 2 and cancels claim 3.

V. Summary of Claimed Subject Matter

One claimed embodiment is drawn to a method of reducing a mobile station from gaining fraudulent access to resources of a communication system, including transmitting a message to invoke a first authentication procedure (page 3, lines 30-32; FIG. 1, ref. num. 108); receiving a second message containing a first parameter (page 3, line 34 to page 4, line 2; FIG. 1, ref. num. 110) and a second parameter (page 4, lines 6-10; FIG. 1, ref. num. 110), the first parameter indicating the status of the first authentication procedure (FIG. 2, ref. num. 208) and the second parameter associated with a second authentication procedure (FIG. 2, ref. num. 204); and in response to the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully (Page 4, lines 13-18; FIG. 2, ref. num. 208).

This and other aspects of the disclosure are discussed more fully in the instant specification on page 3, line 30 through page 5, line 19 in conjunction with FIGS. 1-2.

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VI. Grounds of Rejection for Review on Appeal

Whether claims 1 and 5 are patentable under 35 USC 102(e) over U.S. Patent No. 6,665,530 (Broyles). Whether claims 1 and 5 are patentable under 35 USC 103(a) over Broyles in view of Jung. Whether claim 2 is patentable under 35 USC 103(a) over Broyles in view of Servi. Whether claim 6 is patentable under 35 USC 103(a) over Broyles in view of Jung and further in view of Patel.

VII. Arguments

(a) Rejection under 35 U.S.C. §102:

The Examiner rejected claims 1, 3 and 5 under 35 USC 102(e) as being anticipated by Broyles et al.

Allowability of Claim 1:

With respect to claim 1, the Examiner asserts that Broyles teaches on column 3 line 56 to column 4 line 34 a mobile station sends a first message (RAND and an authentication signature) to the communication network to invoke an authentication procedure at the network. The Examiner asserts that Broyles teaches when the first authentication on the network fails, the authentication center sends a message including a unique authentication signature (claimed "first parameter") generated by the authentication center and a unique challenge security value (claimed "second parameter") to the MSC (MSC receives the claimed "a second message"). The Examiner asserts that the unique challenge security value is transmitted from the MSC to the mobile station for generating a unique authentication signature by the mobile station (reads on claimed "the second parameter associated with a second authentication procedure"). The Examiner further asserts that the unique authentication signature is generated only when the first authentication on the network fails; therefore, the unique authentication signature indicates a status of the first authentication procedure.

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The Examiner cites Broyles column 6 line 26 to column 8 line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully and reads this teaching on Appellants' claim 1 step of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Appellants believe that the Examiner has misinterpreted Broyles.

Broyles teaches a method of preventing replay attacks by a mobile station. When the mobile station attempts to access communication services from the network, the mobile station transmits a security value generated by the MSC to the network along with other identifying information. (Broyles, col. 7, lines 33-38). The network uses this information to authenticate the mobile station (first authentication procedure). (Broyles, col. 7, lines 38-45). If the network determines that the mobile station has already attempted to access service from the network using the same security value (i.e., a potential fraudulent mobile station), the AC in the network generates a unique challenge security value which is communicated to the mobile station. The mobile station uses the unique challenge security value to generate a unique authentication signature and communicates it to the network. The network uses the unique authentication signature to attempt to authenticate the mobile station (second authentication procedure). If the unique authentication signature communicated by the mobile matches the unique authentication signature generated by the network, the mobile station is assumed to be legitimate. (Broyles, col. 7, line 51 to col. 8, line 7). If the two signatures match, the mobile station is granted access to telephone service. If the two signatures do not match, the MS is denied access to service. (Broyles, col. 9, lines 21-26).

Broyles does not teach Appellant's claim 1 step of "... determining whether to initiate call set up for the mobile station prior to the second authentication procedure completing successfully." Broyles teaches always waiting until the second authentication procedure is successful before initiating call setup. Appellants note that the Examiner is in agreement with this characterization of Broyles. On page 3 of the final office action, the Examiner cites col. 6, line 26 to column 8, line 7 as teaching the mobile station's access is delayed until the unique challenge authentication is

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completed successfully. The Examiner purports to read this on "claimed determining not to initiate call setup until the unique challenge authentication is completed successfully." The Examiner, however, misquotes Appellants claim because Appellants do not claim "determining not to initiate call setup" until the unique challenge authentication is completed successfully. Rather, claim 1 recites "... determining *whether to initiate* call setup *prior to* the second authentication procedure completing successfully.

Allowability of Claim 2:

Regarding Claim 2, Broyles does not disclose or suggest in combination with Claim 1

"...determining whether the first parameter indicates that that the first authentication procedure completed successfully;

when the first parameter indicates that the first authentication completed successfully,

initiating call set up before the second authentication procedure has completed;

when the second authentication procedure completes successfully, continuing with call setup; and

when the second authentication procedure does not complete successfully, discontinuing call setup."

Claim 2 is thus further patentably distinguished over the art.

Allowability of Claim 5:

Regarding Claim 5, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

Allowability of Claim 6:

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Regarding Claim 6, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

(b) Rejections under 35 U.S.C. §103:

- (i) The Examiner rejects claims 1, 3 and 5 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung.

Allowability of Claim 1:

With respect to claim 1 and as stated with respect to the 35 USC 102 rejection discussed above, the Examiner cites Broyles column 6, line 26 to column 8, line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully. Appellants agree with this characterization of Broyles, but assert that delaying the mobile station's access until the unique challenge authentication is completed successfully does not read on "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." In Appellants' claim 1, a determination is made whether to initiate call set prior to the second authentication procedure completing successfully. Broyles teaches waiting for the unique challenge authentication (second authentication procedure) to complete successfully before initiating call set up. (Broyles column 9 lines 13-26).

Neither Broyles nor Jung teaches the claim 1 elements of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Thus, claim 1 is patentable over Broyles and Jung, alone or in combination.

Allowability of Claim 5:

Regarding Claim 5, neither Broyles nor Jung discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

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(ii) The Examiner rejects claim 2 under USC 103(a) as being unpatentable over Broyles in view of Patel.

The Examiner asserts that Broyles teaches a first authentication and when the first authentication completes successfully (with a result of authentication failure), a second authentication is performed. The call is set up only when the second authentication authenticates the mobile station. The Examiner admits that Broyles fails to teach "initiating a call setup before the authentication procedure has completed" and cites Servi column 2 line 66-68 as teaching "upon call initiation, an authentication is performed before the call is connected.

Appellants submit that the Examiner misinterprets the teaching of Servi. Servi teaches a plurality of wireless network control stations that allow a plurality of wireless devices to connect to the public switched telephone network. (Column 2, lines 58-62.) To provide proper billing for a call, the control stations must determine and validate the identity of the wireless caller. Accordingly, upon call initiation, the calling wireless device must transmit an identification signal to be verified at the wireless network control station before allowing the connection to the public network 30. (Column 2, line 66 to column 3, line 2). The Examiner incorrectly equates call initiation (performed by the mobile device) with call set up (performed by the network). Servi, column 2, lines 58-62, teaches that when the wireless device initiates a call, the network control station authenticates the device before connecting the device to the network (i.e., before initiating call set up). Appellants claim initiating call setup before authentication is completed. Specifically, claim 2 recites "... when the first parameter indicates that the first authentication completed successfully, initiating call set up before the second authentication procedure has completed . . ."

Thus, Servi does not teach "initiating a call setup before the authentication procedure has completed." As such, Appellants claim 2 is patentable over Broyles and Servi, alone or in combination.

(iii) The Examiner rejected claim 6 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung and further in view of Patel.

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Regarding claim 6, neither Broyles, Jung or Patel discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

For the reasons set forth above, Appellants submit that the Examiner has incorrectly rejected claims 1, 2, 5 and 6 under 35 U.S.C. §§ 102(e) and 103(a) and request that the Board withdraw the rejections.

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VIII. Claims Pending On Appeal

1. A method of reducing fraudulent access to communication system resources by a mobile station, the method comprising the steps of:
 - transmitting a first message to invoke performance of a first authentication procedure;
 - receiving a second message containing a first parameter indicating a status of the first authentication procedure and containing at least a second parameter associated with a second authentication procedure; and
 - in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure has completing successfully.
2. The method of claim 1 wherein the step of determining comprises the steps of:
 - determining whether the first parameter indicates that the first authentication procedure completed successfully;
 - when the first parameter indicates that the first authentication completed successfully,
 - initiating call set setup before the second authentication procedure has completed;
 - when the second authentication procedure completes successfully,
 - continuing with call setup; and
 - when the second authentication procedure does not complete successfully, discontinuing call setup.
3. – 4. (cancelled)
5. The method of claim 1 wherein the second authentication procedure is a Unique Challenge procedure.
6. The method of claim 1 wherein the second authentication procedure is an SSD Update procedure.

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IX. Evidence Appendix

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132, entered by the examiner and relied upon by the appellant in the appeal, or relied upon by the examiner as to grounds of rejection to be reviewed on appeal.

X. Related Proceedings Appendix

No decisions have been rendered by a court of the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. § 41.37.

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Appellants:	Carey et al.)	Examiner Ming Chow
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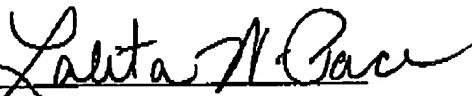
BRIEF ON BEHALF OF APPELLANTS UNDER 37 CFR 41.37

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Mail Date: November 9, 2005

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I. Real Party In Interest

The real party in interest is Motorola Inc., by virtue of an assignment duly executed by the named inventor(s) and recorded in the Patent Office on August 30, 2001 REEL/FRAME 012165/0682.

II. Related Appeals & Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

This is an appeal from a final Office Action, dated June 30, 2005. Claims 1-3, 5 and 6 stand finally rejected. Claim 4 was cancelled in response to a first Office Action dated September 23, 2004. Claim 3 is cancelled in an amendment under 37 CFR 1.116 that has been submitted contemporaneously with this appeal. Claims 1, 2, 5 and 6 are appealed.

IV. Status of Amendments

In a first Office Action dated September 23, 2004, the Examiner rejected claims 1, 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. (U.S. patent no. 6,665,530) in view of Jung et al. (U.S. patent publication no. 2001/0025345). Claims 3 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Diep et al. (U.S. patent publication no. 2003/0048764). Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Patel (U.S. patent no. 6,591,364). In an Amendment dated February 22, 2005, the appellants amended claims 1-3 and cancelled claim 4. Claims 5 and 6 remain as originally filed.

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V. Summary of Claimed Subject Matter

One claimed embodiment is drawn to a method of reducing a mobile station from gaining fraudulent access to resources of a communication system, including transmitting a message to invoke a first authentication procedure (page 3, lines 30-32; FIG. 1, ref. num. 108); receiving a second message containing a first parameter (page 3, line 34 to page 4, line 2; FIG. 1, ref. num. 110) and a second parameter (page 4, lines 6-10; FIG. 1, ref. num. 110), the first parameter indicating the status of the first authentication procedure (FIG. 2, ref. num. 208) and the second parameter associated with a second authentication procedure (FIG. 2, ref. num. 204); and in response to the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully (Page 4, lines 13-18; FIG. 2, ref. num. 208).

This and other aspects of the disclosure are discussed more fully in the instant specification on page 3, line 30 through page 5, line 19 in conjunction with FIGS. 1-2.

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VI. Grounds of Rejection for Review on Appeal

Whether claims 1 and 5 are patentable under 35 USC 102(e) over U.S. Patent No. 6,665,530 (Broyles). Whether claims 1 and 5 are patentable under 35 USC 103(a) over Broyles in view of Jung. Whether claim 2 is patentable under 35 USC 103(a) over Broyles in view of Servi. Whether claim 6 is patentable under 35 USC 103(a) over Broyles in view of Jung and further in view of Patel.

VII. Arguments

(a) Rejection under 35 U.S.C. §102:

The Examiner rejected claims 1, 3 and 5 under 35 USC 102(e) as being anticipated by Broyles et al.

Allowability of Claim 1:

With respect to claim 1, the Examiner asserts that Broyles teaches on column 3 line 56 to column 4 line 34 a mobile station sends a first message (RAND and an authentication signature) to the communication network to invoke an authentication procedure at the network. The Examiner asserts that Broyles teaches when the first authentication on the network fails, the authentication center sends a message including a unique authentication signature (claimed "first parameter") generated by the authentication center and a unique challenge security value (claimed "second parameter") to the MSC (MSC receives the claimed "a second message"). The Examiner asserts that the unique challenge security value is transmitted from the MSC to the mobile station for generating a unique authentication signature by the mobile station (reads on claimed "the second parameter associated with a second authentication procedure"). The Examiner further asserts that the unique authentication signature is generated only when the first authentication on the network fails; therefore, the unique authentication signature indicates a status of the first authentication procedure.

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The Examiner cites Broyles column 6 line 26 to column 8 line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully and reads this teaching on Appellants' claim 1 step of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Appellants believe that the Examiner has misinterpreted Broyles.

Broyles teaches a method of preventing replay attacks by a mobile station. When the mobile station attempts to access communication services from the network, the mobile station transmits a security value generated by the MSC to the network along with other identifying information. (Broyles, col. 7, lines 33-38). The network uses this information to authenticate the mobile station (first authentication procedure). (Broyles, col. 7, lines 38-45). If the network determines that the mobile station has already attempted to access service from the network using the same security value (i.e., a potential fraudulent mobile station), the AC in the network generates a unique challenge security value which is communicated to the mobile station. The mobile station uses the unique challenge security value to generate a unique authentication signature and communicates it to the network. The network uses the unique authentication signature to attempt to authenticate the mobile station (second authentication procedure). If the unique authentication signature communicated by the mobile matches the unique authentication signature generated by the network, the mobile station is assumed to be legitimate. (Broyles, col. 7, line 51 to col. 8, line 7). If the two signatures match, the mobile station is granted access to telephone service. If the two signatures do not match, the MS is denied access to service. (Broyles, col. 9, lines 21-26).

Broyles does not teach Appellant's claim 1 step of "... determining whether to initiate call set up for the mobile station prior to the second authentication procedure completing successfully." Broyles teaches always waiting until the second authentication procedure is successful before initiating call setup. Appellants note that the Examiner is in agreement with this characterization of Broyles. On page 3 of the final office action, the Examiner cites col. 6, line 26 to column 8, line 7 as teaching the mobile station's access is delayed until the unique challenge authentication is

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completed successfully. The Examiner purports to read this on "claimed determining not to initiate call setup until the unique challenge authentication is completed successfully." The Examiner, however, misquotes Appellants claim because Appellants do not claim "determining not to initiate call setup" until the unique challenge authentication is completed successfully. Rather, claim 1 recites "... determining *whether to initiate* call setup *prior to* the second authentication procedure completing successfully.

Allowability of Claim 2:

Regarding Claim 2, Broyles does not disclose or suggest in combination with Claim 1

"...determining whether the first parameter indicates that that the first authentication procedure completed successfully;

when the first parameter indicates that the first authentication completed successfully,

initiating call set setup before the second authentication procedure has completed;

when the second authentication procedure completes successfully, continuing with call setup; and

when the second authentication procedure does not complete successfully, discontinuing call setup."

Claim 2 is thus further patentably distinguished over the art.

Allowability of Claim 5:

Regarding Claim 5, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

Allowability of Claim 6:

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Regarding Claim 6, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

(b) Rejections under 35 U.S.C. §103:

- (i) The Examiner rejects claims 1, 3 and 5 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung.

Allowability of Claim 1:

With respect to claim 1 and as stated with respect to the 35 USC 102 rejection discussed above, the Examiner cites Broyles column 6, line 26 to column 8, line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully. Appellants agree with this characterization of Broyles, but assert that delaying the mobile station's access until the unique challenge authentication is completed successfully does not read on "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." In Appellants' claim 1, a determination is made whether to initiate call set prior to the second authentication procedure completing successfully. Broyles teaches waiting for the unique challenge authentication (second authentication procedure) to complete successfully before initiating call set up. (Broyles column 9 lines 13-26).

Neither Broyles nor Jung teaches the claim 1 elements of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Thus, claim 1 is patentable over Broyles and Jung, alone or in combination.

Allowability of Claim 5:

Regarding Claim 5, neither Broyles nor Jung discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

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- (ii) The Examiner rejects claim 2 under USC 103(a) as being unpatentable over Broyles in view of Patel.

The Examiner asserts that Broyles teaches a first authentication and when the first authentication completes successfully (with a result of authentication failure), a second authentication is performed. The call is set up only when the second authentication authenticates the mobile station. The Examiner admits that Broyles fails to teach "initiating a call setup before the authentication procedure has completed" and cites Servi column 2 line 66-68 as teaching "upon call initiation, an authentication is performed before the call is connected."

Appellants submit that the Examiner misinterprets the teaching of Servi. Servi teaches a plurality of wireless network control stations that allow a plurality of wireless devices to connect to the public switched telephone network. (Column 2, lines 58-62.) To provide proper billing for a call, the control stations must determine and validate the identity of the wireless caller. Accordingly, upon call initiation, the calling wireless device must transmit an identification signal to be verified at the wireless network control station before allowing the connection to the public network 30. (Column 2, line 66 to column 3, line 2). The Examiner incorrectly equates call initiation (performed by the mobile device) with call set up (performed by the network). Servi, column 2, lines 58-62, teaches that when the wireless device initiates a call, the network control station authenticates the device before connecting the device to the network (i.e., before initiating call set up). Appellants claim initiating call setup before authentication is completed. Specifically, claim 2 recites "... when the first parameter indicates that the first authentication completed successfully, initiating call set up before the second authentication procedure has completed..."

Thus, Servi does not teach "initiating a call setup before the authentication procedure has completed." As such, Appellants claim 2 is patentable over Broyles and Servi, alone or in combination.

- (iii) The Examiner rejected claim 6 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung and further in view of Patel.

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Regarding claim 6, neither Broyles, Jung or Patel discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

For the reasons set forth above, Appellants submit that the Examiner has incorrectly rejected claims 1, 2, 5 and 6 under 35 U.S.C. §§ 102(e) and 103(a) and request that the Board withdraw the rejections.

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VIII. Claims Pending On Appeal

1. A method of reducing fraudulent access to communication system resources by a mobile station, the method comprising the steps of:
 - transmitting a first message to invoke performance of a first authentication procedure;
 - receiving a second message containing a first parameter indicating a status of the first authentication procedure and containing at least a second parameter associated with a second authentication procedure; and
 - in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure has completing successfully.
2. The method of claim 1 wherein the step of determining comprises the steps of:
 - determining whether the first parameter indicates that the first authentication procedure completed successfully;
 - when the first parameter indicates that the first authentication completed successfully, initiating call set setup before the second authentication procedure has completed;
 - when the second authentication procedure completes successfully, continuing with call setup; and
 - when the second authentication procedure does not complete successfully, discontinuing call setup.
3. - 4. (cancelled)
5. The method of claim 1 wherein the second authentication procedure is a Unique Challenge procedure.
6. The method of claim 1 wherein the second authentication procedure is an SSD Update procedure.

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IX. Evidence Appendix

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132, entered by the examiner and relied upon by the appellant in the appeal, or relied upon by the examiner as to grounds of rejection to be reviewed on appeal.

X. Related Proceedings Appendix

No decisions have been rendered by a court of the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. § 41.37.

IN THE UNITED STATES PATENT & TRADEMARK OFFICE

Appellants: Carey et al.)
Appl. No. 09/945,462) Examiner Ming Chow
Filed: August 30, 2001) Art Unit 2645
Title: "A Method For Reducing Fraudulent System Access") Atty. Docket No. CE08796R

BRIEF ON BEHALF OF APPELLANTS UNDER 37 CFR 41.37**SEND CORRESPONDENCE TO:**

Motorola, Inc.

Law Department

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I. Real Party In Interest

The real party in interest is Motorola Inc., by virtue of an assignment duly executed by the named inventor(s) and recorded in the Patent Office on August 30, 2001 REEL/FRAME 012165/0682.

II. Related Appeals & Interferences

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this appeal.

III. Status of Claims

This is an appeal from a final Office Action, dated June 30, 2005. Claims 1-3, 5 and 6 stand finally rejected. Claim 4 was cancelled in response to a first Office Action dated September 23, 2004. Claim 3 is cancelled in an amendment under 37 CFR 1.116 that has been submitted contemporaneously with this appeal. Claims 1, 2, 5 and 6 are appealed.

IV. Status of Amendments

In a first Office Action dated September 23, 2004, the Examiner rejected claims 1, 2 and 5 under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. (U.S. patent no. 6,665,530) in view of Jung et al. (U.S. patent publication no. 2001/0025345). Claims 3 and 4 were rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Diep et al. (U.S. patent publication no. 2003/0048764). Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Patel (U.S. patent no. 6,591,364). In an Amendment dated February 22, 2005, the appellants amended claims 1-3 and cancelled claim 4. Claims 5 and 6 remain as originally filed.

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In a second office action dated June 30, 2005, the Examiner finally rejects claims 1-3, 5 and 6. Claims 1-3 and 5 are rejected under 35 USC §102(e) as being anticipated by Broyles et al. Claims 1, 3 and 5 are also rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. Claim 2 is rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Servi. Claim 6 is rejected under 35 U.S.C. §103(a) as being unpatentable over Broyles et al. in view of Jung et al. and further in view of Patel. An amendment under 37 CFR 1.116 has been submitted contemporaneously with this appeal. The amendment addresses an informal matter in Claim 2 and cancels claim 3.

V. Summary of Claimed Subject Matter

One claimed embodiment is drawn to a method of reducing a mobile station from gaining fraudulent access to resources of a communication system, including transmitting a message to invoke a first authentication procedure (page 3, lines 30-32; FIG. 1, ref. num. 108); receiving a second message containing a first parameter (page 3, line 34 to page 4, line 2; FIG. 1, ref. num. 110) and a second parameter (page 4, lines 6-10; FIG. 1, ref. num. 110), the first parameter indicating the status of the first authentication procedure (FIG. 2, ref. num. 208) and the second parameter associated with a second authentication procedure (FIG. 2, ref. num. 204); and in response to the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully (Page 4, lines 13-18; FIG. 2, ref. num. 208).

This and other aspects of the disclosure are discussed more fully in the instant specification on page 3, line 30 through page 5, line 19 in conjunction with FIGS. 1-2.

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VI. Grounds of Rejection for Review on Appeal

Whether claims 1 and 5 are patentable under 35 USC 102(e) over U.S. Patent No. 6,665,530 (Broyles). Whether claims 1 and 5 are patentable under 35 USC 103(a) over Broyles in view of Jung. Whether claim 2 is patentable under 35 USC 103(a) over Broyles in view of Servi. Whether claim 6 is patentable under 35 USC 103(a) over Broyles in view of Jung and further in view of Patel.

VII. Arguments

(a) Rejection under 35 U.S.C. §102:

The Examiner rejected claims 1, 3 and 5 under 35 USC 102(e) as being anticipated by Broyles et al.

Allowability of Claim 1:

With respect to claim 1, the Examiner asserts that Broyles teaches on column 3 line 56 to column 4 line 34 a mobile station sends a first message (RAND and an authentication signature) to the communication network to invoke an authentication procedure at the network. The Examiner asserts that Broyles teaches when the first authentication on the network fails, the authentication center sends a message including a unique authentication signature (claimed "first parameter") generated by the authentication center and a unique challenge security value (claimed "second parameter") to the MSC (MSC receives the claimed "a second message"). The Examiner asserts that the unique challenge security value is transmitted from the MSC to the mobile station for generating a unique authentication signature by the mobile station (reads on claimed "the second parameter associated with a second authentication procedure"). The Examiner further asserts that the unique authentication signature is generated only when the first authentication on the network fails; therefore, the unique authentication signature indicates a status of the first authentication procedure.

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The Examiner cites Broyles column 6 line 26 to column 8 line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully and reads this teaching on Appellants' claim 1 step of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Appellants believe that the Examiner has misinterpreted Broyles.

Broyles teaches a method of preventing replay attacks by a mobile station. When the mobile station attempts to access communication services from the network, the mobile station transmits a security value generated by the MSC to the network along with other identifying information. (Broyles, col. 7, lines 33-38). The network uses this information to authenticate the mobile station (first authentication procedure). (Broyles, col. 7, lines 38-45). If the network determines that the mobile station has already attempted to access service from the network using the same security value (i.e., a potential fraudulent mobile station), the AC in the network generates a unique challenge security value which is communicated to the mobile station. The mobile station uses the unique challenge security value to generate a unique authentication signature and communicates it to the network. The network uses the unique authentication signature to attempt to authenticate the mobile station (second authentication procedure). If the unique authentication signature communicated by the mobile matches the unique authentication signature generated by the network, the mobile station is assumed to be legitimate. (Broyles, col. 7, line 51 to col. 8, line 7). If the two signatures match, the mobile station is granted access to telephone service. If the two signatures do not match, the MS is denied access to service. (Broyles, col. 9, lines 21-26).

Broyles does not teach Appellant's claim 1 step of "... determining whether to initiate call set up for the mobile station prior to the second authentication procedure completing successfully." Broyles teaches always waiting until the second authentication procedure is successful before initiating call setup. Appellants note that the Examiner is in agreement with this characterization of Broyles. On page 3 of the final office action, the Examiner cites col. 6, line 26 to column 8, line 7 as teaching the mobile station's access is delayed until the unique challenge authentication is

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completed successfully. The Examiner purports to read this on "claimed determining not to initiate call setup until the unique challenge authentication is completed successfully." The Examiner, however, misquotes Appellants claim because Appellants do not claim "determining not to initiate call setup" until the unique challenge authentication is completed successfully. Rather, claim 1 recites "... determining *whether to initiate* call setup *prior to* the second authentication procedure completing successfully.

Allowability of Claim 2:

Regarding Claim 2, Broyles does not disclose or suggest in combination with Claim 1

"...determining whether the first parameter indicates that that the first authentication procedure completed successfully;

when the first parameter indicates that the first authentication completed successfully,

initiating call set setup before the second authentication procedure has completed;

when the second authentication procedure completes successfully, continuing with call setup; and

when the second authentication procedure does not complete successfully, discontinuing call setup."

Claim 2 is thus further patentably distinguished over the art.

Allowability of Claim 5:

Regarding Claim 5, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

Allowability of Claim 6:

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Regarding Claim 6, Broyles does not disclose or suggest in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

(b) Rejections under 35 U.S.C. §103:

- (i) The Examiner rejects claims 1, 3 and 5 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung.

Allowability of Claim 1:

With respect to claim 1 and as stated with respect to the 35 USC 102 rejection discussed above, the Examiner cites Broyles column 6, line 26 to column 8, line 7 as teaching that the mobile station's access is delayed until the unique challenge authentication is completed successfully. Appellants agree with this characterization of Broyles, but assert that delaying the mobile station's access until the unique challenge authentication is completed successfully does not read on "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." In Appellants' claim 1, a determination is made whether to initiate call set prior to the second authentication procedure completing successfully. Broyles teaches waiting for the unique challenge authentication (second authentication procedure) to complete successfully before initiating call set up. (Broyles column 9 lines 13-26).

Neither Broyles nor Jung teaches the claim 1 elements of "in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure completing successfully." Thus, claim 1 is patentable over Broyles and Jung, alone or in combination.

Allowability of Claim 5:

Regarding Claim 5, neither Broyles nor Jung discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is a Unique Challenge procedure." Claim 5 is thus further patentably distinguished over the art.

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(ii) The Examiner rejects claim 2 under USC 103(a) as being unpatentable over Broyles in view of Patel.

The Examiner asserts that Broyles teaches a first authentication and when the first authentication completes successfully (with a result of authentication failure), a second authentication is performed. The call is set up only when the second authentication authenticates the mobile station. The Examiner admits that Broyles fails to teach "initiating a call setup before the authentication procedure has completed" and cites Servi column 2 line 66-68 as teaching "upon call initiation, an authentication is performed before the call is connected."

Appellants submit that the Examiner misinterprets the teaching of Servi. Servi teaches a plurality of wireless network control stations that allow a plurality of wireless devices to connect to the public switched telephone network. (Column 2, lines 58-62.) To provide proper billing for a call, the control stations must determine and validate the identity of the wireless caller. Accordingly, upon call initiation, the calling wireless device must transmit an identification signal to be verified at the wireless network control station before allowing the connection to the public network 30. (Column 2, line 66 to column 3, line 2). The Examiner incorrectly equates call initiation (performed by the mobile device) with call set up (performed by the network). Servi, column 2, lines 58-62, teaches that when the wireless device initiates a call, the network control station authenticates the device before connecting the device to the network (i.e., before initiating call set up). Appellants claim initiating call setup before authentication is completed. Specifically, claim 2 recites ". . . when the first parameter indicates that the first authentication completed successfully, initiating call set up before the second authentication procedure has completed . . ."

Thus, Servi does not teach "initiating a call setup before the authentication procedure has completed." As such, Appellants claim 2 is patentable over Broyles and Servi, alone or in combination.

(iii) The Examiner rejected claim 6 under 35 USC 103(a) as being unpatentable over Broyles in view of Jung and further in view of Patel.

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Regarding claim 6, neither Broyles, Jung or Patel discloses or suggests in combination with Claim 1 "...wherein the second authentication procedure is an SSD Update procedure." Claim 6 is thus further patentably distinguished over the art.

For the reasons set forth above, Appellants submit that the Examiner has incorrectly rejected claims 1, 2, 5 and 6 under 35 U.S.C. §§ 102(e) and 103(a) and request that the Board withdraw the rejections.

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VIII. Claims Pending On Appeal

1. A method of reducing fraudulent access to communication system resources by a mobile station, the method comprising the steps of:
transmitting a first message to invoke performance of a first authentication procedure;
receiving a second message containing a first parameter indicating a status of the first authentication procedure and containing at least a second parameter associated with a second authentication procedure; and
in response to receiving the second message, determining whether to initiate call setup for the mobile station prior to the second authentication procedure has completing successfully.
2. The method of claim 1 wherein the step of determining comprises the steps of:
determining whether the first parameter indicates that the first authentication procedure completed successfully;
when the first parameter indicates that the first authentication completed successfully, initiating call set setup before the second authentication procedure has completed;
when the second authentication procedure completes successfully, continuing with call setup; and
when the second authentication procedure does not complete successfully, discontinuing call setup.
3. - 4. (cancelled)
5. The method of claim 1 wherein the second authentication procedure is a Unique Challenge procedure.
6. The method of claim 1 wherein the second authentication procedure is an SSD Update procedure.

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IX. Evidence Appendix

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132, entered by the examiner and relied upon by the appellant in the appeal, or relied upon by the examiner as to grounds of rejection to be reviewed on appeal.

X. Related Proceedings Appendix

No decisions have been rendered by a court of the Board in any proceeding identified pursuant to paragraph (c)(1)(ii) of 37 C.F.R. § 41.37.